

IN THE CLAIMS:

The following listing of claims replaces all prior versions and listings of claims in the present application.

Listing of Claims:

1. (Currently amended) A seal mechanism, comprising a retaining member having a cylindrical portion configured for mounting the seal mechanism on a body and an annular surface portion for receiving pressure of a pressurized fluid by cooperation with a sealing member, the annular surface portion having an inner periphery facing a sealing surface spaced therefrom with a gap at an innermost peripheral portion thereof, and a flexible member molded in one piece with the retaining member and having a flexible tip to perform a sealing function such that under the pressure of the pressurized fluid the flexible member is pushed against a pressurized-fluid side surface of the annular surface portion including an edge portion of the retaining member, and , wherein the retaining member is provided with a stress reduction mechanism for reducing the stress generated in said flexible member ~~constituted by~~ only in a corner having a predetermined radius at ~~the edge portion in the inner periphery of the annular surface portion of the retaining member, wherein said corner is located within said flexible member in~~ at a side thereof to which the pressure of the pressurized fluid is applied to the sealing member, and the edge portion is formed at a side subjected to a lower pressure than the pressure side.

2. (Original) The seal mechanism according to claim 1, wherein said stress reduction mechanism is constructed such that the gap between the innermost diameter of said retaining member and the outside diameter of a shaft mounted in said flexible member and sliding freely along the flexible member is set to 0.9 mm or less.

3. (Previously amended) The seal mechanism according to claim 1, wherein said stress reduction mechanism is constructed such that an inside corner of said retaining member has a curved surface with a radius of curvature equal to or larger than 0.1 mm.

4. (Original) The seal mechanism according to claim 1, wherein said stress reduction mechanism is constructed such that a material with a swelling rate of 30% or less with respect to the sealed fluid is used for said flexible member which is in contact with a corner of said retaining member.

5. (Original) The seal mechanism according to claim 1, wherein said stress reduction mechanism is constructed such that said flexible member has been removed from the inside corner of said retaining member.

6. (Original) The seal mechanism according to claim 1, wherein said stress reduction mechanism is constructed such that said flexible member which

contacts the sealed fluid is made resistant to penetration of the sealed fluid by surface modification or a coating.

7. (Original) The seal mechanism according to claim 1, wherein said stress reduction mechanism is constructed such that the surface which slides over said sealing surface is made of a low-friction material, or has undergone surface modification, or is covered with a coating.

8. (Original) The seal mechanism according to claim 2, wherein a plurality of seal mechanisms each having a retaining member and flexible member are used.

9. (Original) The seal mechanism according to claim 2, wherein the retaining member has a plurality of through-holes.

10. (Currently amended) A high pressure fuel pump comprising a reciprocating plunger, and a cylinder which is slip-fitted with the plunger and in which a variable-volume pressurizing chamber is formed with the reciprocating motion of said plunger, wherein said fuel pump is provided with the seal mechanism at a periphery of the plunger at which the seal mechanism seals two fluids of a pressurized fuel and a lubricant oil of lower pressure than the pressurized fuel mutually at a sealing surface of the plunger, the seal mechanism comprising a retainer having a pressurized fuel sealing portion and a

lubricant oil sealing portion, with ~~both~~ a common space of the fuel and oil provided between the sealing portions, a sealing member molded with the retainer and pushable against a sealing surface by a pressure of the pressurized fuel being provided at a pressure-receiving side edge portion of a retaining member in the pressurized fuel sealing portion, and the pressure-receiving side edge portion of the inner peripheral portion facing the sealing surface of the pressurized-fuel sealing portion has a surface configured as a stress-relieving mechanism to relieve a contact stress with the sealing member ~~and is formed at a pressure-receiving side edge portion of an inner peripheral portion facing the sealing surface of the retaining member~~ in which a curved portion of the surface is formed at only at a corner at a side exposed to the pressurized fuel to reduce contact stress of the retainer and an edge portion is formed in a corner at a side exposed to the lubricant oil.

11.-12. (Cancelled)

13. (Previously presented) The high pressure fuel according to Claim 10, wherein said stress reduction mechanism is constructed such that the gap between the innermost diameter of said retaining member and the outside diameter of a shaft mounted in said flexible member and sliding freely along the flexible member is set to 0.9 mm or less.

14. (Previously presented) The high pressure fuel according to Claim 10, wherein said stress reduction mechanism is constructed such that an inside corner of said retaining member has a curved surface with a radius of curvature equal to or larger than 0.1 mm.

15. (Previously presented) The high pressure fuel according to Claim 10, wherein said stress reduction mechanism is constructed such that a material with a swelling rate of 30% or less with respect to the sealed fluid is used for said flexible member which is in contact with a corner of said retaining member.

16. (Previously presented) The high pressure fuel according to Claim 10, wherein said stress reduction mechanism is constructed such that said flexible member has been removed from the inside corner of said retaining member.

17. (Previously presented) The high pressure fuel according to Claim 10, wherein said stress reduction mechanism is constructed such that said flexible member which contacts the sealed fluid is made resistant to penetration of the sealed fluid by surface modification or a coating.

18. (Previously presented) The high pressure fuel according to Claim 10, wherein said stress reduction mechanism is constructed such that the surface

which slides over said sealing surface is made of a low-friction material, or has undergone surface modification, or is covered with a coating.

19. (Previously presented) The high pressure fuel according to Claim 18, wherein a plurality of seal mechanisms each having a retaining member and flexible member are used.

20. (Previously presented) The high pressure fuel according to Claim 18, wherein the retaining member has a plurality of through-holes.